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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/730,874

12/09/2003

Frank Check

108-028USANA0

4770

7590

10/18/2005

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EXAMINER

LE, QUE TAN

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,874

Applicant(s)

CHECK, FRANK

Examiner

Que T. Le

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 81-120 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 81-120 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

This is in response to Applicant's amendment filed June 14, 2004.

The amended claims 41-80 have been renumbered as 81-120 (See 37 CFR 1.126).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 81-84, 90, 91 and 97-99 are rejected under 35 U.S.C. 102(b) as being anticipated by Lonis et al 4,737,798.

Lonis et al disclose a method and apparatus for sensing and controlling laser diode in an optical scanning system comprising: a laser source (15); at least one diffractive optical element (22, 24, 27) for directing at least a portion of the laser light beam into a scanning region (12); a sensor array (55) having a plurality of photodiodes (57) providing a plurality of first signal in response to at least a second portion of the

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laser beam; a temperature control element (65, 70, 71) in thermal contact with the laser light source for adjusting the temperature of the laser light source (at least Figures 3-5) in response to the output signals from the sensor array. The temperature adjustment of the laser light source includes the variation of the wavelength of the laser, the threshold value and amplification of the output signals (at least columns 5-6). The laser light beam includes a zeroth order beams. The scanning system includes a rotating disc with multiple holographic optical elements (24) disposed thereon. The temperature control element includes an active heating element and a passive cooling element.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 85-89, 92-96 and 100-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lonis et al 4,737,798.

With respect to claim 85, although Lonis et al fails to specify whether or not the laser diode is a solid state lasing element, selecting a known available type of light source for providing light beam in an optical system would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lonis et al accordingly in order to provide a desired laser light source for the system.

With respect to claims 86 and 87, although Lonis et al lack a clear inclusion of reflected light beam from the scanning region being directed by the holographic

elements toward the sensor array, it would have been inherently included, however, if not, it would have been obvious to one of ordinary skill in the optics art at the time of the invention to modify Lonis et al accordingly in order to provide more compact optics design for the system.

With respect to claims 88 and 89, although Lonis et al fail to specify whether or not the laser light beam including at least one AM modulated laser beam for generating range data characterizing at least one spatial dimension of objects passing through scanning region, this would have been a matter of obvious design choice to one of ordinary skill in the art, if so desired, in order to provide more reliable sensing performances of the sensor array. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lonis et al accordingly in order to provide more accurate control performances of the system.

With respect to claims 92-96, although Lonis et al lack a clear inclusion of a resistor for the active heating element and/or a heat sink for the cooling element, it would have been inherently included, however, if not, the use of a resistor for a heating element would have been known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lonis et al accordingly in order to provide a better thermal contact to the heating element. The use of a heat sink for the cooling element and/or varying duty cycle of a pulse modulated power signal would have been obvious for similar reasons set forth above.

With respect to claims 100-120, although Lonis et al further (column 5) include a relatively simple analog or digital circuitry being used for the system but fail to specify

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the components of the temperature control element, the use of at least one AC coupling capacitor and/or an RC circuitry for filtering out unwanted signal in a processing circuitry would have been obvious to one of ordinary skill in the electrical art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lonis et al accordingly in order to provide a more accurate controlled temperature for the system. The inclusion of a third, fourth (binary) signals generated by additional components/circuitry would have been obvious for similar reasons set forth above.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Tomita et al 4,834,477 disclose an optical system having a semiconductor laser light source with temperature control device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Que T. Le whose telephone number is (571) 272-2438.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta, can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Que T. Le

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Primary Examiner